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Abstract

This paper examines the magnitude and the sources of the expected shareholder gains in UK public to private transactions (PTPs) in the second wave from 1997-2003. Pre-transaction shareholders on average receive a premium of 40% and the share price reaction to the PTP announcement is about 30%. The main sources of the shareholder wealth gains are undervaluation of the pre-transaction target firm, increased interest tax shields and incentive realignment. An expected reduction of free cash flows does not determine the premiums nor are PTPs a defensive reaction against a takeover.

Keywords: Public to private, going-private, LBO, MBO, IBO, Management buyins, Management buyouts, Leveraged buyouts.

JEL codes: G34, G32.

1. Introduction

In the Anglo-American corporate landscape, the public corporation is believed to have numerous advantages over its private counterpart. A stock exchange listing combined with the separation of ownership and control allows access to capital markets, specialization in managerial skills, investors' wealth diversification with liquid portfolios, a higher degree of media exposure, risk diversification by founders and entrepreneurs, the use of stock price-based remuneration packages, and so on. However, this concept of the corporation has a major drawback: an unaccountable management could create substantial agency costs leading to corporate value destruction. The size of the inefficiencies induced by agency conflicts led Jensen (1989) to predict that the eclipse of the public corporation was near. This provocative claim was an exaggeration but, in the 1980s, a first important wave of leveraged public to private transactions (PTPs)[1] with a value of approximately USD 250 billion occurred in the US (Opler and Titman, 1993). The phenomenon traversed the Atlantic, with the first UK LBO seeing daylight in 1985 (Wright, Chiplin, Robbie and Albrighton, 2000). Although much smaller in scale, activity in the UK market for PTPs transactions kept pace with the US, reaching a peak in 1989.

Most that is currently known about public to private transactions results from US research analyzing US samples covering the 1980s (see Jensen, 1993 for a review). However, while a vibrant, and economically important PTP market has developed in the UK from the late 1990s onwards, there has to date been virtually no systematic research on the sources of shareholder wealth gains of UK going-private transactions. It is questionable whether this US evidence on the sources of wealth gains from leveraged public to private transactions (PTPs) is generalizable to the UK for the following reasons. First, the nature and extent of debt financing in US PTPs differs substantially from UK deals. Whereas US LBOs are (and were especially in the 1980s) partially financed with junk bonds, privately placed mezzanine was and still is the standard in the UK (Toms and Wright, 2004). Since these two sources of funds have different characteristics (in terms of flexibility, interest rates, maturity, covenants and gearing levels), it is not unlikely that the choice of financing between the two will influence all phases of a PTP. Also, the debt levels associated with UK transactions (across the 1980s and 90s) are generally lower than the gearing ratio in US deals. Second, while tax motives have been shown to be a very important source of wealth gains in US, it unclear whether this result can be extrapolated to the UK given that the tax laws differ. Third, the US market for corporate control counts relatively more hostile takeovers than the UK market. Hence, the takeover defense hypothesis as a reason for PTPs is less likely to hold in the UK. Fourth, Toms and Wright (2004) argue that UK venture capital and buyout markets have traditionally been more closely linked than in the US. Consequently, public to private activity in the UK has focused more on growth opportunities, whereas US LBOs have occurred more frequently in mature, cash-rich industries. Last but not least, whereas US state regulation has been able to stringently regulate unsolicited takeover activity, the UK system has preferred self-regulation (the City Code on Takeovers and Mergers), thus favouring the unrestricted functioning of market forces (Miller, 2000). For all

[1] The term going private is synonymous with public to private.

these reasons, a study on the second PTP wave in the UK is compelling and provides an important contribution to the PTP and LBO/MBO literature.

Our sample includes all 177 of the UK PTPs from 1997 (the start of the second wave) until 2003. These leveraged deals can be subdivided into management buyouts (MBOs), management buyins (MBIs) and institutional buyouts (IBOs).[2] In a typical UK MBO, the incumbent management seeks institutional support from private equity firms to purchase a major stake in the firm and to fund the transaction which aims at taking the firm private (Wright et al., 1991). IBOs (also called Bought Deals or Finance Purchases) are deals where the bidding group consists solely of institutional investors and private equity houses. When the management stays on, its performance is rewarded with a modest equity stake and/or an equity ratchet[3]. In terms of equity ownership, what separates MBOs from IBOs, is whether the management team gained its equity stakes through being part of the bidding group (MBO), or as a component of a remuneration package (IBO). In an MBI, a team of outside managers or entrepreneurs purchases (most of) the equity. The premium for the average UK PTP amounts to about 40%. In addition, the market reaction to the announcement of a PTP transaction as measured by the cumulative abnormal returns (CAARs) over an 11 day event window centred around the announcement day, are also high at about 30%. These premiums and wealth effects are not dissimilar to the US findings.

We reach the following results: an important source of expected shareholder wealth gains (as captured by the premiums and CAARs) is the undervaluation of the target firms' share prices over a one-year period prior to the first PTP announcement. The higher premiums offered for such a firm reflect the potential additional value that will be generated once the firm reaches its private status. This effect is stronger for MBOs and IBOs than for MBIs, which may arise due to differences in asymmetric information. In contrast to US research, there is no relation between a target firm's tax burden prior to the PTP and the expected wealth gains. However, the fact that higher premiums are paid for firms with low leverage does provide some support for the tax benefits hypothesis. The unused debt capacity is likely to create a large additional tax shield.

The potential for increased incentive realignment in the private firm is also an important determinant of the shareholder wealth gains as both the premium and CAARs are higher for firms with lower levels of managerial ownership. We also report evidence supporting the control hypothesis: in firms with stronger outside blockholders, the premiums and CAARs are lower. This negative relation is especially strong in firms with monitoring by corporations as pre-PTP shareholders. This supports the fact that in firms monitored by this type of outside shareholders, there is less scope of operating performance improvements in the post-PTP period.

The free cash flow hypothesis is not sustained as firms are not taken private to reduce high free cash flows, which is consistent with most US studies. Prior takeover interest in the firm does not lead managers to pay more to take their firms private in order to pre-empt potential raiders. Not surprisingly, when at the announcement of a takeover, multiple bidders emerge, the shareholder wealth gains are higher.

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[2] In the US literature, IBOs and MBIs are usually called Leveraged Buyouts (LBOs).

[3] Performance contingent contract operating as an incentive device enabling management to increase its equity holdings in a post-buyout firm upon meeting ex ante specified performance targets (Kaplan and Stromberg, 2001).

The paper is organized as follows. Section 2 provides an overview of the worldwide evolution of PTPs while Section 3 embeds the hypotheses in the literature. Section 4 discusses the sample selection, lists the data sources and presents the descriptive statistics. Section 5 explains the methodology. Section 6 shows the premiums and CAARS while Section 7 discusses the results from the cross-sectional regression models. Section 8 concludes.

2. International trends in public to private transactions

The US economy of the 1980s was characterized by extensive (hostile) corporate takeovers and restructuring. Mitchell and Mulherin (1996) state that 57% of US quoted firms were then takeover targets or were restructured. Jensen (1991) argues that during this period, LBOs and MBOs functioned as the necessary catalyst for change to reduce the excess capacity in 'complacent corporate America'. The US going-private buyout market developed from less than $1 billion in 1979, to a peak of more than $60 billion in 1988. However, the culmination of this LBO wave was associated with many bankruptcies and fierce public and political resistance (anti-takeover legislation) such that activity slowed down abruptly, to less than $4 billion in 1990 (Kaplan and Stein, 1993). In the ten years time frame of the 'deal decade', $1.3 trillion in total asset value had changed hands (Shleifer and Vishny, 1991). Holmstrom and Kaplan (2001) argue that the 1980-style deals are not necessary anymore, because the focus on shareholder value has been institutionalized by corporations since. Nevertheless, from 1997 onwards, a modest rise in US PTPs can be observed (see Figure 1a). Since 2000, PTPs have been motivated by the decline of the stock markets which seems to make the sale of public equity too costly as a source of funds. Small companies in particular experienced strong adverse effects from low trading volumes (Kuhn Capital, 2003). More importantly though, the implementation of the Sarbanes-Oxley Act is said to increase the costs of a listing substantially.

[Insert Figures 1a, 1b, 1c and 1d about here]

Although smaller in scale, the activity in the UK public to private market kept pace with the US and the first wave culminated in 1989 (Figure 1b). Public controversy over increased hostility in transactions that year induced the Panel on Takeovers and Mergers to adopt new rules regarding the procedures in PTPs (Wright et al.,1991). As in the US, the sudden drop in deals after 1989 made it seem as if the public to private transaction had already outlived its short life. Nevertheless, a new wave of public to private transactions started in 1997. Explanations for the second PTP wave generally emphasize the increased presence of private equity and debt financiers, target shareholder support (e.g. through irrevocable undertakings), the increased use of inducement fees and 'hard' exclusivity agreements, and the expectation that 100% of the shares can be acquired (e.g. through squeeze-out provisions) (Ashurst et al., 2002; Davis and Day, 1998; CMBOR, 2002). However, a much more important reason seems to be the disregard for small companies by institutional investors. For example, upon going private, Mr. Ainscough, CEO of Wainhomes Plc, said: "*We feel unloved and unwanted. There has been a lack of investor appetite for small company shares over the last two or three years. This made it difficult to fund expansions and acquisitions through the issue of new shares, which is one of the main*

reasons for going public in the first place" (FT, March 4, 1999). The lack of liquidity and the need for expansion capital as a consequence of the cut-off of institutional equity finance, drove small companies into the arms of private equity firms[4]. The present PTP wave culminated in 1999-2000 in terms of deal numbers, but the value of PTP transactions remains high, reaching a peak of £7.9 billion in 2004. As increasingly larger corporations were being targeted, the mean deal value rose from £169 million in 1999 to £793 million in 2004 (CMBOR, 2005).

As in the UK, PTP activity in Continental Europe was low in the 1980s compared to the second PTP wave of the late 1990s (Figure 1c). In absolute terms, the European market for PTP transactions is still small for the following reasons. First, Continental European countries have fewer listed companies. Second, fewer private equity houses consider undertaking a potentially risky and costly PTP. Moreover, the potential for exiting an investment through a flotation is more limited (Sudarsanam, 2003: 278). Third, culture may still also play a mayor role in the functioning and sophistication of European financial markets. For example, 'German managers generally try to avoid the hassle associated with a quotation', while 'Swiss and Italian companies that do obtain a listing are generally to proud of it to even rationally consider going private' (CMBOR, 2002). Finally, the legal and fiscal infrastructure is traditionally not as favorable to PTPs as in the UK. However, recently implemented changes in regulation may stimulate the European PTP market.[5]

An important development in Japan from late 2000 was the appearance of buyouts of whole listed companies, which accounted for a tenth of the deals in the 2000-02 period (Figure 1d). This trend increased in 2003 with the completion of six public to private transactions (Wright, Kitamura and Burrows, 2005). With a large proportion of companies on the Tokyo Stock Exchange trading at or below book value, there would appear to be scope for significant further opportunities for public to private transactions. The average price to book ratio on the Tokyo Stock Exchange fell from just under 3 in 1990 to under 1.5 in 1997 and has been fluctuating around this level since then. However, the absence of minority squeeze-out provisions presents limitations to public to private transactions.

3. Hypotheses

Essentially, several sources of wealth gains may motivate the going-private decision. These are: tax savings, reduction of agency costs (due to incentive realignment, control concentration or free cash flow reduction), wealth transfers from stakeholders to shareholders, transaction costs reduction, takeover defenses, corporate undervaluation. In this section, we formulate these hypotheses and embed them in the literature.

[4] Financial Times of June 11, 1999

[5] For instance, the transparency, shareholder protection, takeover rules and development of risk capital as provided for in Italy's recent Company Law reform allow for more flexibility in structuring private equity deals (see Ulissi (2000) and Lovells (2003)). The new Dutch Fiscal Unity law of 1/1/2003, enables acquisition vehicles of private equity investors to allocate the losses of high interest payments from acquisition-related leverage to the operations of the target. The new German Takeover Act prohibits the frustration of a PTP deal by the target board (Ashurst et al., 2003). Also, the German tax reform eliminates the corporate tax on disposal of shares. On 2/1/2003, the French Minister of Economics declared that the French usury law does not apply to corporate bonds, high yield issues, or debt instruments (Fried and Frank, 2003). This has eliminated the need for French borrowers in LBO transactions to set up new

3.1 The tax benefit hypothesis

As the vast majority of PTP transactions take place with a substantial increase in leverage, the increase in interest deductions constitutes an important source of expected wealth gains. Interest tax deductibility on the new loans constitutes a major tax shield increasing the pre-recapitalization value.[6] Clearly, the extent to which tax benefits play a role depends on the fiscal regime and the marginal tax rates a company is subject to. Kaplan (1989b) estimates the tax benefits of US PTPs to be between 21% and 72% of the premium paid to shareholders to take the company private for the first half of the 1980s. Still, he adds that 'a public company arguably could obtain many of the tax benefits without going private'. Lowenstein (1985: 759) is critical and calls for a restriction of the tax benefits ('truffles from the tax man') in LBOs, judging that tax-related benefits 'are so large as to dispense the need to create the other, real gains', a claim supported by Frankfurter and Gunay (1993).

Under the tax hypothesis, firms with high tax bills benefit from going private, mainly because the large amount of debt used to finance the transaction creates a considerable additional tax shield which augments the value of the pre-recapitalization firm. Hence:

Hypothesis 1: The shareholder wealth gains from a PTP are positively related to high tax levels and low leverage ratios of the pre-transaction target firms.

In a competitive market for corporate control, the tax benefits are predictable and hence may be appropriated by pre-buyout investors, leaving no tax-related incentives for the post-buyout investors to take a company private.

3.2 The agency costs-related hypotheses

From the basics of agency theory, three important hypotheses underlie the motives of public to private transactions: incentive realignment, control and free cash flow.

The incentive realignment hypothesis

The insights of Adam Smith (1776) and Berle and Means (1932) on the divergence of interests between managers and stockholders in a joint stock company are formalized by Jensen and Meckling (1976). When manager-entrepreneurs are also the sole residual claimants, they extract pecuniary rents and non-pecuniary[7] benefits. The optimal mix follows from a deliberation of the marginal costs and utilities associated with the

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companies in other jurisdictions than the French. Also, since 2002 the possibility for conditional bids for quoted companies have been expanded (Lovells, 2003).

[6] For the US LBOs in the 1980s, Kaplan (1989b) mentions asset step-ups as another source of tax-related benefits. In this procedure, the tax basis of the pre-transaction assets is inflated to the "appraised fair market value". The premium is attributed to goodwill on the seller's books, which leads to tax deductions via goodwill amortization.

[7] These non-pecuniary (also called non-marketable perquisites or private benefits) are not transferable and are investor specific. Possible benefits could be the reputation or 'psychic' value of being in control (Aghion and Bolton, 1992), salary, and the value expropriated from shareholders (Dyck and Zingales, 2004).

type of benefit. When managers sell a portion of the residual claims to outsiders, the marginal costs of the non-pecuniary benefits decrease as they will bear only a fraction of those costs. Consequently, managers may increase their private benefits (e.g. shirking of effort) which decreases the firm's value. The need to realign the incentives of managers with those of shareholders is frequently mentioned as an important factor in PTPs. For instance, Kaplan (1989a) reports a median increase in equity ownership of 4.41% for the two top officers, and of 9.96% for the other managers in LBOs. Under the incentive realignment hypothesis, the reunification of ownership and control will improve the incentive structure and is expected to increase managerial effort to maximize firm value. Hence:

Hypothesis 2: The shareholder wealth gains in MBOs and IBOs are negatively related to managerial equity ownership in the pre-transaction firm.

The effects of the incentive realignment hypothesis at higher levels of managerial ownership are contested because entrenchment effects may render management - even in the wake of poor performance - immune to board restructuring and may delay corporate restructuring (Franks et al., 2001).

The control hypothesis

Grossman and Hart (1980) describe the free-rider problem associated with monitoring managerial actions in public corporations with a dispersed shareholder structure. As the investment in monitoring by an individual shareholder becomes a public good for all shareholders, individual shareholders owning small equity stakes may underinvest in monitoring activities. The presence of strong ownership concentration involving closer monitoring by outside shareholders prior to the PTP implies that fewer wealth gains from going-private are expected as the pre-transaction firm is less likely to suffer from high agency costs. Hence:

Hypothesis 3: The expected shareholder wealth gains from PTPs are negatively related to the degree of concentration of equity claims in the hands of monitoring outside shareholders.

As different classes of ownership have different monitoring abilities, we expect a strongly negative relation between wealth gains and the presence of corporations, and individuals or families controlling large share stakes. In the UK, there has traditionally been little evidence of institutional investor activism although there are currently signs of the opposite (Crespi and Renneboog, 2002). Surveys reveal that many UK institutions have established voting policies (for examples, see Mallin (1997)).[8] Furthermore, the PIRC-surveys since 1999 on institutional voting trends concludes that overall proxy voting levels have increased to over 50%.

[8] As a necessary (but not sufficient) condition for potential voting pact formation by institutions, the casting of votes at annual meetings is considered. Legally, many corporate issues are subject to a shareholder vote: e.g. declaration of the dividend (after board recommendation), transactions involving the acquisition or disposal of assets worth 25% or more of the company's net assets, removal of directors, certain alterations in the capital structure (e.g. share repurchases), non-application of the pre-emption rights, directors' remuneration, etc. For an exhaustive enumeration see Stapledon (1996:84). The evolution of institutional voting is described in the following studies: only 20% of investment funds exercised voting rights in 1991 (ISC (1991)), 35% voted in 1995 (Mallin (1997)) and 41% in 1997

The free cash flow hypothesis

Free cash flow (FCF) is usually defined as the cash flow in excess of that required to fund all projects that have a positive net present value (NPV) when discounted at a relevant cost of capital. Using empirical results on executive remuneration and corporate performance, Murphy (1985) argues that managers have incentives to retain resources and grow the firm beyond its optimal size - so-called 'empire building' - which is in direct conflict with shareholders' interests. This problem is most severe in cash-rich industries with low growth prospects. By exchanging debt for equity, managers credibly precommit to pay out future cash flows rather than retaining them to invest in negative NPV projects. The increased risk of default resulting from the recapitalization of the LBOs constitutes a motivating factor to make the firm more efficient. Jensen (1986:325) states that 'many of the benefits in going-private and leveraged buyout transactions seem to be due to the control function of debt'. In the carrot and stick theory of Lowenstein (1985), the carrot represents the increased managerial share ownership that allows managers to reap more of the benefits from their efforts. The stick appears when firms borrow heavily in order to effect this incentive alignment, which forces the managers to efficiently run the company to avoid default (Cotter and Peck, 2001).

Under the free cash flow hypothesis, high leverage associated with PTPs will reduce wasting FCF by bonding managers to pay out more cash flows to service the debt. This will be especially beneficial to firms that generate large amounts of FCF, on which there are little 'hard' claims by outside investors. Hence:

Hypothesis 4: The expected shareholder wealth gains from PTPs are positively related to levels of free cash flows in the pre-transaction firm.

However, relying on debt to motivate managers may induce the agency costs of debt as debt gives managers the incentive to substitute low-risk assets for high-risk assets (an asset-substitution problem).

3.3 The transaction costs hypothesis

DeAngelo et al. (1984) note that the costs of maintaining a stock exchange listing are very high. From proxy statements they infer that the costs of public ownership, registration, listing and other stockholder servicing costs, are about $100,000 per annum. Perpetuity-capitalized at a 10% discount rate, this implies that at least a value increase of USD 1 million should be generated by the PTP. Other US estimates of servicing costs mentioned in their paper range from $30,000 to $200,000, excluding management time.

For UK companies with a market capitalization of GBP 100 million, the admission fee to the London Stock Exchange (LSE) amounted to GPB 43,700 in 2003 with an annual listing fee of GBP 6,280. These costs vary with the size of the corporation and the type of market on which it is listed. For example for large firms, the direct costs of a listing on the Alternative Investment Market (AIM) are only half those of the official

(MVA (1998)). Pension funds exercise voting rights more frequently with 44% in 1993 (ISC (1993)) and 59% in 1996 (Mallin (1997)). The vast majority of insurance companies votes: 70% exercised voting rights in 1993 (ISC (1993)) and 87% in 1996 (Mallin (1997)).

market.[9] In addition, the indirect costs of a listing on the AIM are likely to be much lower than those of a listing on the official market because the listing and disclosure requirements are lower on the AIM.[10] Depending on the size of the company, Benoit (1999) reports that for UK quoted firms, the fees paid to stockbrokers, registrars, lawyers, merchant bankers and financial PR companies, as well as the exchange fee and the auditing, printing and distribution of accounts, can even amount to GBP 250,000.[11]

In short, the transaction costs hypothesis suggests that the wealth gains from going private are largely the result of the elimination of the direct and indirect costs associated with maintaining a stock exchange listing. Hence:

Hypothesis 5: The shareholder wealth gains from PTPs are positively related to the cost savings from eliminating the stock market listing.

3.4 The takeover defense hypothesis

Lowenstein (1985) reports that some corporations have gone private via an MBO 'as a final defensive measure against a hostile shareholder or tender offer'. Afraid of losing their jobs when the hostile suitor takes control, management may take the company private. Stulz (1988) constructs a model in which pressures from the market for corporate control interact with managerial ownership and finds a curvilinear relationship with firm value. The high levels of equity ownership of firms where management is entrenched make it unlikely that these firms are taken over by outside parties (Jensen and Ruback, 1983). However, maintaining control over the company can put management in the predicament of having too much of their personal wealth invested in the firm (Halpern et al., 1999; Hubbard and Palia, 1995). In short, the takeover defense hypothesis suggests that the premiums in PTPs reflect the fact that the management team may intend to buy out the other shareholders in order to insulate itself against an unsolicited takeover. Hence:

Hypothesis 6: The expected premiums from PTPs are positively related to takeover pressure from the market for corporate control.

3.5 The undervaluation hypothesis

As a firm is a portfolio of projects, there may be asymmetric information between management and outsiders about the maximum value that can be realized with the existing assets. It is possible that management, which has superior private information, perceives that the share price is undervalued in relation to the true

[9] The Alternative Investment Market was started June 19, 1995, to facilitate the trading in the securities of smaller, growing companies, which are unable to meet the full criteria for the admission to the official list of the UK Listing Authority or for whom a less rigid regulatory environment is considered more appropriate. In July 2003, 706 companies were trading on AIM, with a total market capitalization of £12,699 million.

[10] An elaborate enumeration of these differences can be enquired at the London Stock Exchange, or found on www.Londonstockexchange.com.

[11] Some UK CEOs estimate that these costs may even be higher: Roy Hill, the CEO of Liberfabrica, estimated, just after his company was acquired in 1999, these costs at GBP 400,000. Likewise, Jurek Piasecki, CEO of Goldsmiths put City-associated costs at GBP 500,000, 3 months after his firm went private in 1999. An even higher estimate comes

potential of the firm. This problem may be exacerbated where listed corporations, especially smaller ones, find it troublesome to use the equity market to fund expansion, as it may be difficult to attract the interest of institutional shareholders and fund managers. The lack of interest in such shares creates illiquidity and implies that they are likely to remain lowly valued which provides an impetus to go private. If institutions attempt to sell shares in firms that experience thin trading, it is likely to have a noticeable effect on the share price which will reduce the value of any remaining holdings. There is some anecdotal and empirical evidence from the UK for this perceived undervaluation by management.[12]

Lowenstein (1985) argues that, when management is the acquiring party, it may employ specific accounting techniques to depress the pre-announcement share price (see also Schadler and Karns, 1990). By manipulating dividends, refusing to meet with security analysts or even deliberately depressing earnings, managers can use the information asymmetry to their advantage prior to an MBO or IBO. Still, DeAngelo (1986) finds no evidence of systematic manipulation of pre-buyout accounting data by incumbent management. Both Harlow and Howe (1993) and Kaestner and Liu (1996) report that MBOs are preceded by significant abnormal share purchases by insiders, whereas outsider-induced buyouts are not. They suggest that this confirms that pre-buyout insider trading is associated with private managerial information. Alternatively, it is possible that specialized outsiders (like institutions or private equity investors) realize that a firm has substantial unrealized locked-up value which incentivizes them to buy a toehold stake followed by a management or institutional buy-in.

The undervaluation hypothesis states the management or an LBO specialist are able to pay higher premiums in a PTP when the pre-transaction firm is underperforming. Likewise, higher CAARs at the PTP announcement may reflect that the market incorporates the information that the private firm will be able to find an alternative higher-valued use for the firm's assets. Hence:

Hypothesis 7: The expected shareholder wealth gains from PTPs are positively related to the degree of undervaluation.

3.6 The wealth transfer hypothesis

There are three main mechanisms through which a firm can transfer wealth from bondholders to stockholders: (i) by an unexpected increase in the risk of investment projects or (ii) by (large increases in) dividend payments, or (iii) by an unexpected issue of debt of higher or equal seniority. In PTPs, the third mechanism in particular can lead to substantial bondholder wealth expropriation. Asquith and Wizman (1990), Cook et al. (1992) and Warga and Welch (1993) show that bondholders with covenants offering low protection

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from the executive chairman of Wainhomes, who, upon the announcement of taking the company private, estimated the costs of maintaining a listing at GBP 1 million (Financial Times, August 31, 1999).

[12] For example, the chief executive of Allied Textiles stated that the market was not reflecting the intrinsic value of the company and the chairman of the building firm Ward, claimed that the housing boom had not been reflected in the company's share price (Financial Times, 2000). Weir, et al. (2005b) use data on perceived and actual undervaluation prior to going to private, controlling for other factors, to identify the importance of undervaluation in the PTP decision. They also find that undervalued firms had relatively high institutional shareholdings, suggesting that the buyout provides institutions with a means of exiting firms with poor market valuation, particularly during a time of limited pressure from the takeover market.

against corporate restructuring lose some percentage of their investment. Still, Amihud (1989) explains that the wealth transfer does not represent a loss for bondholders, but is rather a recuperation of the protection which was greater than was originally contracted for. Unfortunately, we will not be able to test this hypothesis due to the fact that our sample does not contain a sufficient number of firms with traded bonds, which is not unusual in the UK.

The empirical literature has paid much less attention to wealth transfers other than those related to bondholders. Shleifer and Summers (1988) suggest that new investors in takeovers can break the implicit contracts between the firm and stakeholders, like employees by reducing employment and wages. Nevertheless, Weston et al. (1998) note that such hostility against employees is not observed in PTPs, although there is some evidence of large falls in employment after adjustment for industry effects in both the US and UK (Kaplan, 1989a; Smith, 1990; Harris, Siegel and Wright, 2005).

4. Data sources, descriptive statistics and methodology

4.1 Sample selection and data sources

We retrieved all 181 UK public to private transactions completed between January 1997 until February 2003 from the database of the Centre for Management Buyout Research (CMBOR), which comprises the European population of leveraged buyouts and buyins and does not have a lower size threshold for inclusion. We excluded 4 firms due to data availability[13] and hence retain a sample of 177 firms. In addition to the firm name, the year of deal completion and the acquirer, the CMBOR database on these transactions contains data on deal value, firm activities, the financial structure underlying the transaction and certain post-transaction variables. We supplemented these data by collecting accounting information, bid details, the ownership structure and share price data from the following sources. Accounting data were gathered in the first instance from Extel cards (Thomson Research) and subsequently from the Worldscope database (LexisNexis). Where these two databases contained incomplete information, we consulted the annual reports. The details of the PTP bids were collected from Mergerstat reports which comprise the contextual anecdote on each buyout, a description of the business operations of the target and a financial summary on both firm and deal. These reports were complemented with information from the offer documents collected from Thomson Mergers, information from Securities Data Company (SDC), and press articles in the Financial Times over a period up to five years prior to each PTP transaction. We verified the data and eliminated inconsistencies by consulting the Regulatory News Service (RNS) announcements provided by UK-Wire Ltd. Access to the databases was granted by Deloitte Corporate Finance (Amsterdam).

[13] Doncasters Plc is based in England but its shares were traded on a foreign exchanges (not on the London Stock Exchange); Charnos Plc only delisted its preference shares; Crown Sports Plc did not go private after the hostile buy-in attempt, but made a settlement with the suitor; Locker Group Plc delisted from the Official List 6 months before its MBO announcement, and therefore no updated share prices were available.

Data on beneficial equity ownership stakes held by the management and by outside shareholders were collected from the last annual reports prior to the PTP.[14] All press articles on the 177 sample firms in the Financial Times for the five years leading up to the buyout transaction were collected to find data on flotations, restructurings, earnings warnings and CEO turnover. We complemented these data using the Chairman's Statements in annual reports and the offer documents. If no information was found in the Financial Times or in the annual reports, we assumed that a flotation, restructuring, earnings warning, or CEO removal did not take place.

Share prices adjusted for dividends and stock splits as well as the market capitalization by firm were collected from DataStream. From this database, we also downloaded the three-month Treasury Bill rate and the FTSE All Shares Index. Our final sample of 177 PTPs is larger than most US studies (with exception of the studies by Goh et al. (2002) and Lehn and Poulsen (1989)). Also, while some authors restrict their sample only to the larger transactions (e.g. Kaplan, 1989a; Amihud, 1989), our study does not have a size bias.

4.2 Descriptive statistics

Accounting and share price based measures

The summary statistics on accounting-based measures and share price performance are displayed in Table 1 for every type of transaction. The size of the average firm measured by total assets amounts to GBP 200.7 million. While average size is similar to that of US LBOs in the Kaplan (1989a) sample, our median size is substantial lower. Throughout the 1980s, the asset size of firms going private steadily increased in the US, culminating in the USD 25 billion LBO of RJR Nabisco in 1989. The largest firm in our sample is MEPC Plc, with an asset size of roughly GBP 4 billion. In order to successfully complete the larger deals, sophisticated financial engineering techniques are imperative[15]. Consequently, large firms are more likely to be targeted by institutional buyers with specialized financial engineering capabilities, rather than by management teams, which Table 1 confirms. The average debt-equity ratio amounts to 34.5%. Firms retain 11% of their assets in cash or cash equivalents.

[Insert Tables 1 and 2 about here]

Our sample firms have a return on assets (ROA) of 3.7% but there are significant differences by type of deal (Table 1). Firms with negative accounting returns, indicating an underperforming management, are more likely to be subject to an MBI. IBOs focus on better performing firms which have on average an ROA of 5.7%. Panel A of Table 2 shows that the share price returns of UK PTP candidates have substantially underperformed the market, especially in the peak years of the equity boom (1998-9). This suggests that

[14] In accordance with section 325 of the Companies Act 1985, directors are required to notify the Register of Director's Interests of their holdings and publish all their interests and those held by their immediate families (including other affiliated persons within the meaning of section 346 of the Companies Act 1985) in the annual report. Under sections 198 to 208 of the Companies Act 1985, firms are also required to publish the identity and holdings of all substantial shareholders with an equity stake over 3 percent.

[15] Financial Times of September 28, 2000.

MBOs, MBIs and IBOs have a disciplinary nature[16]. However, an alternative interpretation is that these corporate control transactions are merely a reaction to the undervaluation of the target firms' shares. This is especially likely for small cap firms, which, on average, underperformed the market in the 1990s by 6% per year,[17] only to revive in 1999. One of the reasons for this phenomenon was the decreasing institutional interest in small caps due to consolidation in the fund management industry (CMBOR, 2002). Barred from equity funding, small, listed companies experienced considerable problems to gain access to growth capital to fund acquisitions or organic expansion. Private equity firms have taken advantage of this need for funds by taking undervalued firms private. The returns made by shareholders in the process, reattracted institutional interest towards the end of 1999.

Panel B of Table 2 compares the market capitalization of the 44 sample firms floated since 1993 at the flotation date, and the market capitalization based on the offer price at the PTP announcement. On average, these firms lost GBP 382.2 million or 12.8% of their value at flotation. Some subsamples managed to generate a positive share price return (4.8% in 1999, 8.8% in 2000, 3.7% in 2001), but even here the annualized returns are small.

Industry composition

Our sample contains companies from the wider business spectrum. Practically half of the deals in 1998 took place in the business services sector, representing about 25% of PTP value that year. In 1999, the business services sector again broke records in terms of number of deals, although the average value remained modest. Roughly 40% of the MBO transactions took place in two sectors: manufacturing and business services. In 1999, manufacturing accounted for the largest share of total deal value, followed by retail distribution. MBIs account for more than one-third of all deals done in retail distribution, a sector characterized by high cash generation and stable competition. In 2000, the property sector experienced the largest deal observed so far with the £3.5 billion IBO of MEPC plc. In value terms, the sector represents nearly a third of total transactions, but in terms of number of deals only accounts for 20% of the total PTP activity. The takeover battle for Hillsdown Plc was the second largest deal in 2000 and emphasizes the importance of the manufacturing sector among PTPs. After 2000, the total value of the deals decreased in this sector, but it still remained in second place. Few PTP deals have been completed in the financial sector, but Willis Corroon's Plc management buyout of £851 million was a substantial transaction. Few high-tech firms went private after economic conditions changed radically when the bubble burst in 2000. Contrary to our expectations, more deals were completed in this sector before the bubble rather than after. It is remarkable that IBOs, representing merely 12.5% of the full sample, account for one-third of all transactions in the high-tech sector.[18]

[16] The executive board of Sears Plc for example, was said to have a "shocking disregard for shareholder value" (see FT of January 21,1999) and many firms were taken private with the motivation to be restructured away from the public arena.

[17] Financial Times of June 5, 1999

[18] This may be related to the notion of 'busted-techs' where listed technology corporations encounter control problems with existing management and need to undergo a buy-out to enable greater control to be exercised (Wright, Hoskisson, Busenitz and Dial, 2000).

Deal characteristics

Table 3 summarizes the characteristics of our PTPs, as well as presents data on the company histories for the five years preceding the event. Following previous studies (e.g. Goergen and Renneboog, 2003), a transaction is classified as hostile when the board of the target rejects the first offer. Panel A reveals that 7.3% of the PTPs were hostile, which is largely due to the fact that about a third of MBIs were opposed by the target board.[19] Private equity firms try to avoid hostile transactions as they frequently result in the loss of company specific information and skills if the incumbent management departs.[20] In certain IBOs, the continuing involvement of the executive directors is sometimes an explicit condition in the offer.[21]

[Insert Table 3 about here]

Bidder competition involves a long-standing debate regarding PTPs. In order to protect minority shareholders, Lowenstein (1985) argued for its institutionalization, while Amihud (1989) concluded that this would deter possible buyers from making a bid in the first place. Paul Myners[22], former head of fund manager Gartmore, recently argued for a prohibition on management increasing their initial offer in the event of a higher bid, as a method to 'reduce the scope for executives to take shareholders for too much of a ride'. Our sample contains only eleven transactions with more than one bidder in the PTP process, evenly distributed over deal types.[23] In these cases, the management initiated an MBO immediately after having been approached by an outside bidder.[24] White knight transactions were not found to be present among MBIs and IBOs. Five firms were in financial distress before the transaction and dependent on the benevolence of banks for the continuation of their operations. In three of these five cases, the banks had actually announced that they were terminating their investments, such that these firms had to seek a new life-line.

As expected from the numbers presented in Table 1, most of the larger deals involving an equity investment of more than GBP 100 million are IBOs.

Company history

Panel B of Table 3 presents summary statistics for the recent company history leading up to the public to private transaction. On average, 19% of the sample firms experience some type of takeover pressure

[19] Goldstein (2000) applies a stricter classification that excludes seemingly hostile behavior that could be a simple price bargaining. He accepts 'true' hostility e.g. in case of litigation or the search for a white knight. We also use a stricter definition, namely a bid is hostile when the independent directors do not recommend the bid until at least a majority of the shares is in the hands of the hostile suitor. The main motivation of those directors to oppose is the fact that the individual holdout in the cases with high levels of bid acceptances could result in a highly illiquid claim for the shareholder, once the firm is delisted. Under this second definition, only five cases in our sample are truly hostile. Three of the truly hostile transactions were observed for MBIs, while MBOs and IBOs both experienced one such deal. In the rest of the paper, our first definition of hostility will be used.

[20] The IBO of Esporta Plc is a well-documented example of a hostile public to private transaction.

[21] In the IBO of the Finelist Group Plc, the continued involvement of the management was crucial to the success of the buyout.

[22] Financial Times of May 15, 2003

[23] This provides some support for the hypothesis that PTPs generally involve listed corporations where shareholders have few alternatives but to accept a buy-out offer.

(e.g. published rumors, takeover negotiations, or an offer for the shares) in the year prior to going private. For twelve firms, the PTP was not the first encounter with leveraged buyouts: they had undergone an LBO, an MBO, or in most cases, a divisional buyout in the past. The time between the first and the second transaction, was sufficiently large not to distinguish these firms from the others in the sample. Eleven firms were listed on the AIM when going private. Lower entry criteria, a less stringent regulatory regime and certain tax benefits for investing in AIM-firms[25] seriously reduce the burden of a listing on the AIM.

Almost 20% of our firms were floated less than five years before returning to private ownership. Lowenstein (1985) describes how a decline in stock markets following a hot issue market can be misused by founder-managers with large shareholdings. In the presence of a collective action problem amongst dispersed shareholders, they can take the company private at a depressed share price. The controversy stems from the impression that these types of transactions, in the short period that they reside on the public equity markets, transfer a disproportionally large share of the firm's risk onto the claims of the outside shareholders for which they are not compensated by sharing in potential future improvements.

Forty-eight firms engaged in asset restructurings in the five years leading up to the transaction, with 28 restructurings concentrated in the last three years. Firms that go private through an MBO restructure significantly less frequently over the three years prior to the buyout. This is not surprising given that management can time the MBO.[26] If management undertakes major asset restructuring before the PTP, less additional value can be created after the PTP. Firms that restructured are more likely to go private through an IBO. Almost half the firms have given a profit warning at least once during the five years prior to their PTP. This provides some support for the fact that PTPs are important mechanisms to restructure poorly performing companies. Table 3 also gives some data on board restructuring: in a quarter of the sample, the CEO had to depart in the three year period leading up to the PTP. A new CEO could, for instance, initiate a new strategy, with going private as a key element in a successful restructuring.[27]

Ownership

All large shareholders (owning share stakes of at least 3%) were categorized into one of nine categories: banks, investment and pension funds, insurance companies, industrial and commercial companies, individuals or families, the government, real estate companies, directors and venture capitalists. As documented above, good monitors reduce agency and information asymmetry problems. More specifically, Franks and

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[24] In the case of Hogg Robinson Plc, the prior bid was never officially tabled, but the resistance to the unofficial bid was so explicitly reported in the FT, that we categorized it as a defensive MBO.

[25] Inland Revenue considers companies traded on AIM as non-quoted for tax purposes. As a result of this, the taper relief, which reduces the taxable capital gains made on the sale of shares, is higher for AIM-quoted firms than for firms traded on the main market.

[26] Management may undertake restructuring and then make a buy-out offer before the benefits appear in the operating income. There is mixed evidence relating to the ability of management to manipulate earnings (De Angelo, 1986; Perry and Williams, 1994).

[27] An example from the sample is Mid Kent Holdings Plc, which went private as part of the restructuring program started by its new CEO. He intended to reduce the cost of capital and attract new capital to face the ever stronger competition in the water industry.

Nyborg (1996) show that outside blockholders increase the probability of corporate restructuring[28]. The Herfindahl index in Table 4 shows that there is large dispersion of share stakes in the sample firms. On average, the dominant shareholder owns 23.5% of the shares.

[Insert Table 4 about here]

The nature of ownership is also an important dimension of the ownership structure (Holderness and Sheehan, 1988). For example, Franks et al. (2001) find that institutional investors do not perform a monitoring role in the UK. These institutional investors have a stake larger than 3% in almost 90% of the sample firms, and are the largest shareholder in 45% of the sample firms. The average holding of a substantial director-shareholder is higher, at 12.5%. Prior to the PTP, venture capitalists were the largest shareholder in only three sample firms. Table 4 also presents the ownership data by deal type. Not surprisingly, in the firms that go private through an MBO, directors have larger ownership stakes (which is significantly different from the other types at the 1% level). The fact that directors of firms that go private through MBIs own 9.2% of the equity explains the high level of hostility in this type of transaction. Firms that go private through an IBO have lower equity stakes in the hands of directors (significantly lower at the 1% level), while the average stake controlled by an institution is considerably higher (at the 5% level of significance).

Summary

The descriptive statistics have shown that the sample firms are not drawn from a homogeneous population. MBOs typically are smaller firms, in which the directors possess a larger share of the firm's equity. Their deal characteristics are generally characterized by a low hostility rate, and are occasionally driven by defensive measures. MBIs seem to be the exact counterpart. They are typically larger than MBOs, and seem to occur to occur in mature industries with high levels of free cash flow. On average they suffer from negative accounting performance, although this does not result in lower share price performance than for the other deal types. A relatively large proportion of MBIs involve hostile bids. IBOs are typically larger in size and seem to have better prospects than the other deal types. Their ownership structure is characterized as one where directors typically own a small proportion of the shares and institutional investors are the dominant shareholders. The low cash-to-assets ratio seems to confirm that these firms are growth firms that may provide good platforms for buy-and-build strategies of private equity firms.

5 Methodology

The shareholder wealth effects in buyout research are generally analyzed through two different methodologies: a premiums analysis or an event study. Each method has its own advantages but they can jointly increase the power of econometric tests in PTP research.

[28] Phillips and Drew Fund Management, the UK's third largest pension fund manager, takes an active stand towards the large blocks of shares it invests in. On several occasions, this has led to a large restructuring, takeover, or even a PTP,

5.1 Event study methodology

When the marketplace is rational, the informational content of an event should be immediately reflected in asset prices (Campbell et al., 1997). The problem with LBO research is that the abnormal returns (ARs) may be cross-sectionally incomparable, due to the non-uniformity of the information releases. Two subsamples can be distinguished. For the first subsample, the initial announcement is e.g. a recommended offer, a (hostile) tender offer, a firm intention, a mandatory offer triggered by the activation of rule nine of the City Code[29], or simply a notification of negotiations with a disclosed party. Consequently, investors know what type of deal has emerged (i.e. a leveraged PTP of the type MBO, MBI or IBO). For the second subsample, the information reaches the market in two stages: there is an initial notification of an imminent deal[30] (event 1), but the announcement disclosing the deal type only follows later (event 2). Some earlier research has taken the second date as the event date. It is clear that such results are biased due to the fact that the initial announcement (event 1) has a large effect on the share price and that event 2 could be regarded as a correction to event 1. Hence, a correct analysis of the shareholder wealth effects of the announcement of an MBO, MBI or IBO requires the definition of two events:

Event 1: The very first announcement of takeover interest in the target firm that eventually leads to the PTP.
Event 2: The very first announcement that identifies a going private proposal

For 64% of our sample, events 1 and 2 coincide, but in 36%, the first announcement that starts the takeover process does not reveal the identity of the bidding party. For these firms, there are on average 51 working days between the two events and this period does not vary substantially between MBOs, MBIs and IBOs. Therefore, we add the cumulative average abnormal returns (CAARs) for events 1 and 2 (while excluding overlap in event windows). Thus, the resulting CAARs of the two subsamples may be more comparable.

Abnormal return estimation

ARs are calculated as the difference between the daily logarithmic returns corrected for dividends and stock splits, and the expected returns as predicted by the CAPM. The risk free rate is proxied by the three month treasury bill rate. The systematic risk is estimated over a period of 235 until 41 trading days prior to event 1 (day 0) using the FTSE All Shares Index. We correct the betas for non-synchronous trading (Dimson, 1979), apply a correction for regression to the mean and winsorize the betas at the 5% and 95% level.

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as in the case of Sears Plc (Financial Times of December 24, 1998).

[29] Rule nine of the City Code on Takeovers and Mergers requires that any person acquiring 30% or more of the voting rights is required to make a bid for the whole firm at the highest price paid by him for such shares in the previous 12 months (see Paul (1994) for a good review of the City Code).

[30] The City Code requires firms to disclose takeover negotiations when there are rumors, speculation, or an untoward price movement in the shares, if it can reasonably be determined to be caused by the bidders actions (Paul, 1994). Typically, this type of announcements does not embody more than the notification of a negotiation that 'may or may not lead to an offer for the shares of the company'.

To test the null hypothesis that ARs are equal to zero, the parametric significance tests based on the variance of ARs in the estimation window are employed as in Kothari and Warner (1997). We also compute a nonparametric generalized sign test (see Cowan, 1992) to verify the robustness of the results (see Appendix 1).

5.2 Analysis of premiums

As an alternative to abnormal returns, many papers (e.g. Kaplan, 1989a,b; Lehn and Poulsen, 1989; and Halpern et al., 1999) confine the measurement of wealth effects to the premium offered to the shareholders. The premium is the logarithm of the final price offered by the acquiring party divided by the share price before the first announcement (event 1+2 for the firms with information releases in stages): premium = ln (final price offered / pre-takeover share price). Under this specification, the measured premium impounds the informational value of any announcement made during the going-private process, such as (amended) bid prices, bidder competition, and the identification of the acquiring party. Thus, the premium is calculated over a period comprising event windows 1 and 2 and the period in between.

There are several variations on the definitions of the 'final price offered' and the 'pre-takeover share price'. As the final price, we take the final offer price of the winning bid (as do e.g. Harlow and Howe, 1993). Alternatively, Halpern et al. (1999) and Lehn and Poulsen (1989) use the final traded price of the shares in the market before the delisting. They believe that the final traded price best reflects the market value of a bid comprising securities. However, as a PTP bid frequently contains payment in loan notes[31], the market value of such an offer cannot be inferred from the last traded share price. The reason is that the shares which are tendered are not sold to the bidder via the market. Instead, in the UK, shareholders can accept or reject a tender offer for their shares by completing and returning the form of acceptances[32]. This means that the price movements observed in the market are speculative only. The last, true assessment of the final bid is not observable from stock market data.

The difficulty with the benchmark 'pre-takeover share price' is the choice of the date. To allow for the share price run-up in the period preceding the first announcement of takeover interest, a period of twenty or forty days prior to the event date is chosen. We call this the 'anticipation window'. Kaplan's (1989a) LBO study on the US and Goergen and Renneboog's (2004) study on European M&As both mention that the anticipation window spans approximately two months before the initial announcement. We also opt for forty working days.[33] The test statistics are given in Appendix 1.

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[31] In UK buyouts, it is common for the bidder to offer the vendor the option to receive part of the payment in the form of loan notes. These notes are issued by the bidder and usually guaranteed by the sponsor of the buyout/buyin. The issuance of loan notes has advantages for both buyer and seller. Subject to Internal Revenue clearance, loan notes allow the seller to defer the tax charge arising from the sale. Due to the low rate of interest on loan notes in public offers, the buyer enjoys a lower cost of financing the acquisition.

[32] The form of acceptance is a document attached to the offer document, which shareholders have to complete and return to the receiving agent who is contracted by the bidder. In case of acceptance of the bid, the share certificates need to be enclosed.

[33] Some studies (e.g. Kaplan, 1989b; Asquith and Wizman, 1990; and Easterwood et al., 1994) use hybrid methodologies which correct the premium for a benchmark return (e.g. the S&P500). However, these approaches boil down to an event study with a flexible event window.

6. Results

6.1 Wealth effects of leveraged PTPs: abnormal returns and premiums.

Panel A of Table 5 shows the premiums offered in all UK PTPs 1997-2003: a shareholder selling his shares to the final bidder will earn a premium of approximately 41%. This is in line with the US evidence from the 1980s where the premium ranges from 33% to 56% (Table 6). The most recent UK study by Weir et al. (2005a) shows a premium of 45% (Table 6). The premiums by transaction type are presented in panel B of Table 5. IBOs, MBOs and MBIs generate premiums of 43%, 42% and 41%, respectively. The difference (across anticipations windows of various length) is not statistically significant. Out of the 177 UK PTPs, 5 are in financial distress and have an important negative impact on the average premium. Excluding the 5 distressed firms increases the premium by 3.5% in Table 5. At the other extreme, the highest premium offered for a company was almost 180%[34].

[Insert Tables 5 and 6 about here]

The wealth effects corrected for market reactions as captured by the CAARs are given in Table 7. The left hand-side of the table presents the abnormal returns over different event windows for the first announcement of the PTP. Over the event window [-5,5], the CAARs amount to 26%, while over longer windows, the CAARs modestly increase to 29% (panel A of Table 7). Panel B shows that the wealth effects of the different types of PTP transactions are very similar. In contrast to M&A research, we find that there is little evidence of a price run-up due to leakage of information or trading on rumours (not reported in the tables). Although the CAARs are negative in the [-40,-6] event window, this is entirely caused by the financially distressed firms. The distressed firms reduce the wealth effects of the PTP announcements. Excluding these firms from our sample increases the CAARs by about 4%.

[Insert Tables 7 and 8 about here]

As pointed out in the methodology section, for some firms the first announcement of a PTP only relates to a takeover (event 1) and does not reveal the bidding party nor the type of PTP. The deal type follows in a subsequent press release (event 2). Figure 2 shows that it is important to consider both event 1 and 2 for firms in which the PTP announcement comes in stages. When only considering event 1 or event 2 – as traditional PTP research frequently has – the wealth effects are downward biased. The right hand-side of table 7 shows the combined effects of events 1 and 2. Table 8 enables us to compare our findings with those from the US and to conclude that UK PTPs generate market reactions that are largely similar to those in the US.

[Insert Figure 2 about here]

[34] In this specific case, Firth Rixson Plc, the buyer was an institutional investor who wanted to take the company private under a buy-and-build strategy, for which this company was meant to be the platform.

6.2 The determinants of shareholder wealth gains from going private

We test the hypotheses of Section 3 by estimating cross-sectional regressions using both the premium (with an anticipation window of 20 days) and the CAARs (with event window [-2,2]) as dependent variables. As explained above, we add the CAAR [-2,2] of event 2 to that of event 1 in case of information releases in stages. Although the full sample of PTPs consists of 177 observations, we exclude the 5 financially distressed firms as most of the hypotheses are not applicable to these companies. We briefly discuss the motives for distressed PTPs below. All models are tested for the presence of heteroscedasticity by means of a White test (White, 1980) and the results are not biased by multicollearity.

The tax benefit hypothesis predicts that firms with higher pre-transaction tax bills, will benefit more from the interest deductibility associated with increased leverage. Hence, as in previous research (e.g. Lehn and Poulsen, 1989; Kieschnick, 1998; and Halpern et al., 1999), we include taxes-to-sales and expect a positive relation between this variable and the wealth effects (see Table 9). However, taxes do not only depend on operating profitability but also on, for example, the increased depreciation resulting from investment policy and on various accounting policies. When taxes are low due to poor corporate performance, one may still expect that the taxes will increase as it is reasonable to assume that the PTP transactions will enhance future profitability. Therefore, we expect a negative relation between the wealth effects and an interaction term with taxes and a dummy variable equalling one for firms performing better than the median return on assets. The tax benefit also depends on how much additional debt the target firm can contract. In companies with a low debt-equity ratio, the additional debt capacity is higher than in firms with a high proportion of debt. Therefore, we expect a negative relation between debt and the wealth effects (see Table 9).

Table 10 reveals that the tax coefficients are not significant but that bidders are willing to pay higher premiums for firms with lower debt-equity ratios. The fact that the tax variables are not significant stands in contrast with the findings for US PTPs (e.g. Kieschnick, 1998; and Kaplan 1989b). Both Dicker (1990) and Weir et al. (2005a) point out that the tax advantages of financing firms with debt are smaller in the UK than in the US. Still, we conclude that higher premiums are paid for firms with low leverage which proxies both for the tax advantage of additional interest deductibility and for the ease of financing the takeover operation.

[Insert Table 9 and 10 about here]

We hypothesize that the gains from going private arise from a stronger alignment of incentives in the post-transaction private firm. Firms of which the managers own only small equity stakes, are expected to benefit most from going private, as the buyout is expected to reduce potential agency problems. As mentioned above, the validity of this relation is contested for higher levels of managerial ownership when agency problems induced by managerial entrenchment may dominate. Therefore, we include a dummy variable for those firms where management controls more than 25% of the firm's equity, which corresponds to the highest quartile of managerial ownership of the sample. This threshold is also equal to the entrenchment level documented by Morck et al. (1988). Tables 10 confirms the incentive realignment hypothesis: higher premiums are paid and higher CAARs are realized for firms with low managerial stakes. The additional negative impact

of very high managerial equity ownership (>25%) is also consistent with the fact that this share block discourages other bidders (not belonging to the management) to make a counter bid (Stulz, 1988).

Under the control hypothesis, we expect that strong outside shareholders monitor the firm such that there is less scope for performance improvement once the firm is private. This is reflected in a lower premium and a lower CAAR. A strong outsider shareholder is defined as a shareholder controlling an equity stake of 3% of more in the pre-buyout firm and is an institutional investor (bank, pension fund, investment fund or trust, or insurance company), an individual or family, or a corporation.

We find support for the control hypothesis, especially for corporations as good monitors. The strongly negative relation for the outside control dummy variable of corporations show that lower levels of control by corporations in the pre-transaction firm are associated with larger expected wealth gains upon going private. This finding is consistent with the fact that corporations owning large equity stakes perform a monitoring task. In contrast, the presence of family blockholders is not correlated with wealth gains in PTP transactions. We also find that the presence of significant share stakes held by institutional investors is negatively related to shareholder wealth gains (Table 10). This negative relation may be the result of institutional shareholder activism which implies that lower performance improvements will be generated (as reflected in the premium and the CAARs) once the firm reaches its private status. However, interviews with institutional investors give more credibility to an alternative explanation: the low premiums in firms with institutional investors as the dominant shareholders reflect the fact that these institutional investors are locked in to poorly performing firms with little prospect of improvement. Hence, institutional investors contribute little monitoring value and are relieved to sell out (see also Franks et al, 2001).

According to the free cash flow (FCF) hypothesis, firms that generate large free cash flows may waste resources. Exchanging equity for debt in a PTP will reduce the amount of resources under managerial discretion and will bond management. This is expected to make the firm's capital budgeting decisions more efficient. Thus, we include the FCF-to-sales ratio as we expect that the higher the FCF, the more wealth gains can be created through a PTP. Our findings in Table 10 show that going private is not driven by the need to return FCF to the shareholders.

Under the transaction costs hypothesis, the gains from going private are primarily caused by the elimination of the costs related to a stock exchange listing. We are only able to estimate the impact of the direct costs of maintaining a listing. As mentioned above, the listing costs for AIM-listed firms are lower than for firms listed on the official market of the LSE such that we expect that an AIM-listing is related to lower expected wealth effects. A listing on the AIM may also proxy for the lower indirect costs of a listing resulting from more flexible listing requirements. As predicted, the expected sign is negative for the premium regression.

The takeover defence hypothesis predicts that firms go private as a defensive strategy. Thus, pressure from the market for corporate control is expected to force up the premiums paid in PTPs. In MBOs, the management will have to come with a high bid to pre-empt bidding by other contestants. As a proxy for takeover pressure, we take a dummy variable which equals 1 if there has been any takeover interest in the year leading up to the PTP announcement. We expect a positive sign. Table 10 reveals that the relation is indeed positive but falls short of being statistically significant (11% in model 1). We therefore reject the takeover

defence hypothesis as an explanation for the premium (as do Weir et al. (2005a) in their model explaining the decision to go private).

The wealth gains from going private may also be caused by undervaluation. The higher the discrepancy between the market value of a firm, and the potential value under private ownership, the larger will be the wealth gains in a PTP. For each type of PTP transaction, past performance is captured by share price returns over a one-year period prior to the PTP ending one month before the first announcement. The expected sign is negative for all deal types, although the magnitude of the effect is expected to be different per type. Due to information asymmetry, managers are best placed to identify undervaluation such that we expect that the impact of past share price performance on the premium and wealth effects is larger for MBOs and IBOs (which frequently retain the incumbent management) than for MBIs. Table 10 confirms the undervaluation hypothesis: lower share price performance in case of MBOs and IBOs leads to higher premiums and CAARs. The past share price performance for firms going private through an MBI is not significant.

We also include several control variables. When takeovers are contested, the expected premium and CAARs are higher than in friendly acquisitions. Obviously, hostility is more likely to occur in IBOs or MBIs. Maybe due to the small number of hostile bids in our sample (13 out of 172), Table 10 shows that hostility does not seem to influence the wealth effects. Bidder competition is also likely to push up the premium and CAARs, which is confirmed in model 1 of Table 10.

We also control for past corporate or board restructuring. The reason is the outcome of such restructuring is already reflected in the share prices such that less additional shareholder value may be created through operating performance improvements. We include dummy variables which are equal to one if (i) a major asset restructuring has taken place within the five years prior to the announcement of the PTP and (ii) the CEO was removed within a two year period prior to the PTP. While the former variable is not significant, the second is strongly negative.

We also include a dummy variable indicating whether the transaction took place prior or subsequent to 2000 in order to control for the equity market decline which started in March 2000. While our univariate statistics indicate that the premium is substantially higher (by more than 10%) in the pre-2000 period, this result is not upheld in the regression models.

We conclude that this study weakly supports the tax benefits hypothesis in PTP transactions as a higher premium is paid for firms with low debt-equity ratios. Incentive realignment is also a source of value. We also report some evidence for the control hypothesis, but the most convincing results relate to the undervaluation hypothesis for MBOs and IBOs. Another reason to go private also seems to be the avoidance of the direct costs of maintaining a stock exchange listing. In contrast, going-private transactions are not initiated to curb free cash flows or to avoid unsolicited takeovers. The reported adjusted R-squared shows that the models explain about 25-30% of the sample variation in the dependent variable. Compared to previous research on PTPs' wealth effects, the models fit the data reasonably well.

From the cross-sectional analysis, we have excluded the five financially distressed firms as most of the hypotheses described above are not applicable to these firms. In this small number of firms, the PTPs are used

to avoid bankruptcy or could even be regarded as a pre-packaged sale of bankrupt firms. Appendix 2 briefly describes these cases.

7. Conclusions

In the 1990s a vibrant, and economically important public to private (PTP) market developed in the UK. Nevertheless, to date there has been virtually no systematic research into the sources of wealth gains in UK going-private transactions. On this topic, most insights relate to the first wave of leveraged buyouts in the US during the 'deal decade' (the 1980s). This paper analyzes a large sample comprising the population of UK PTP transactions in the second going-private wave that started in the latter half of the 1990s. We employ two methods to capture the expected wealth effects of leveraged buyouts: a premium analysis and an event study. We find that on average, PTPs generate premiums of more than 40% and the wealth effects corrected for expected returns amount to almost 30%.

In contrast to US research, the taxes paid by the target firm prior to the PTP transaction are not related to the wealth effects the deal is expected to generate. However, the fact that higher premiums are paid for firms with low leverage provides weak support for the tax benefits hypothesis. The unused debt capacity is likely to create a large additional tax shield.

Our strongest result relates to the undervaluation hypotheses. Consistent with most US studies, this paper identifies a positive relation between pre-transaction undervaluation and the expected shareholder gains at the PTP transaction. This effect is found to be stronger for MBOs and IBOs (which mostly retain part of the incumbent management) than in MBIs, as the former are better placed to exploit undervaluation issues due to informational asymmetries.

The potential for increased incentive realignment in the private firm also seems an important determinant of the shareholder wealth effects in PTP transactions as both the premium and CAARs are higher for firms with lower levels of managerial ownership. We also report evidence supporting the control hypothesis: in firms with stronger outside blockholders, the premiums and CAARs are lower. This negative relation is especially strong in firms with strong corporations as shareholders. This supports the fact that in firms monitored by this type of outside shareholders, there is less scope for operating performance improvements in the post-transaction period.

We do not find any evidence sustaining the free cash flow hypothesis: firms are not taken private to reduce high free cash flows as Jensen (1989) predicts. This is consistent with most US studies and with the recent UK study by Weir et al. (2005a). While we are not able to test the total cost savings a firm can realize by abandoning a stock exchange listing, we test the relative effect of maintaining a listing on the AIM compared to the official market of the LSE. The negative relation between an AIM-listing and the wealth effects does not contradict the hypothesis that less value is created by abandoning the AIM-listing and its less expensive listing requirements.

Prior takeover interest in the firm does not lead managers to pay more to take their firms private in order to pre-empt potential raiders. Not surprisingly, when at the announcement of a takeover, multiple bidders

emerge, the shareholder wealth gains are higher. In contrast, hostile bids do not trigger higher CAARs or premiums.

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Appendix 1: Calculation of test statistics.

To test for the significance of average abnormal returns (AAR) and CAARs, Kothari and Warner (1997) describe the followings test statistics.

The one-day test statistic:

$$t_{AR_t} = \frac{AAR_t}{\sigma_{AR}} \text{ where} \quad \text{(A1)}$$

$$\sigma_{AR} = \sqrt{\frac{1}{T-1}\sum_{t=-E_1}^{t=E_2}(AAR_t - A\bar{A}R)^2},$$

$$AAR_t = \frac{1}{N}\sum_{j=1}^{N} AR_{jt}, \quad \text{for } j = 1,..., N \quad \text{(A2)}$$

$$\text{and } A\bar{A}R = \frac{1}{T}\sum_{t=E_1}^{E_2} AARt \quad \text{(A3)}$$

E1 and E2 refer to beginning and the end of the estimation window. T is the number of working days in the estimation window, namely 195. This one-day statistic follows a t-distribution. The CAR for security j is computed as follows, for j=1,…,N:

$$CAR_{j,t1,t2} = \sum_{t=t2}^{t1} AR_{jt} \quad \text{(A4)}$$

Where t1 and t2 are the first and last day of the event window. The CAR over events 1 and 2, CAR^{1+2}, is computed as follows, for j=1,…,N:

$$CAR^{1+2}{}_{j,W} = \begin{cases} CAR^{1}{}_{j,W,t1^1,t2^1} + CAR^{2}{}_{j,W,t1^2,t2^2} \text{ if } t1^2 > t2^1 \\ CAR^{1}{}_{j,W,t1^1,t2^1} \text{ if otherwise} \end{cases} \quad \text{(A5)}$$

$CAR^1{}_{j,W,t1^1,t2^1}$ and $CAR^2{}_{j,W,t1^2,t2^2}$ are the CARs for event 1 and event 2, respectively, with equal event windows W. $t1^1, t2^1$ and $t1^2, t2^2$ are the beginning and end dates of each event's window W. The cross-sectional average of the individual CARs (whether based on event 1, 2 or 1+2), is computed as follows for j=1,…,N:

$$CAAR_{t1,t2} = \frac{1}{N}\sum_{j=1}^{N} CAR_{j,t1,t2}$$

The test statistic for CAAR is:

$$t_{CAAR} = \frac{CAAR_{t1,t2}}{\sigma_{AR}\sqrt{T_2}} \quad \text{(A6)}$$

where σ_{AR} is given by equation (A1) and T_2 is the amount of days in the event window.

The second parametric test is a simple t-test for the significance of the sample means[35]. While the test statistics in Kothari and Warner (1997) compute the ARs' variance from the estimation window, this simple t-test uses the variance of event-induced abnormal returns, calculated for each day in the event window individually:

$$t^s{}_{AR_t} = \frac{AAR_t}{\sigma^s{}_{AR_t}/\sqrt{N}} \text{ where} \quad \text{(16)}$$

$$\sigma^s{}_{AR_t} = \sqrt{\frac{1}{N-1}\sum_{j=1}^{N}(AR_{jt} - AAR_t)^2} \quad \text{for } j = 1,.., N, \quad \text{(17)}$$

where AAR_t is defined as in equation (A3).

[35] See for a discussion of its statistical properties Strong (1992: 545).

The test statistic for CAAR is then computed as follows:

$$t^{s}_{CAAR} = \frac{CAAR_{t1,t2}}{\sigma^{s}_{CAAR} / \sqrt{N}}, \text{ where} \tag{18}$$

$$\sigma^{s}_{CAAR} = \sqrt{\frac{1}{N-1}\sum_{j=1}^{N}(CAR_{j,t1,t2} - CAAR_{t1,t2})^2} \qquad \text{for j = 1,..., N} \tag{19}$$

where $CAAR_{t1,t2}$ is defined as in (A6), $CAR_{j,t1,t2}$ is defined as in equation (A4) for event 1 and 2, and as in (A5) for event 1+2.

We also estimate a non-parametric test: the generalized sign test which compares the proportion of positive abnormal returns around an event to the proportion from a period unaffected by the event (Cowan, 1992).

Cowan (1992) shows that in ideal econometric conditions, Corrado's (1989) rank test is more powerful than the generalized sign test. However Cowan also demonstrates that the rank test is misspecified under thin trading, while the generalized sign test remains correctly specified. As the securities in our sample are likely to suffer from thin trading, we opt for the generalized sign test:

$$\hat{p} = \frac{1}{N}\sum_{j=1}^{N}\frac{1}{T}\sum_{t=E1}^{E2} S_{jt} \qquad \text{for j = 1,..., N} \tag{20}$$

where :

$$S_{jt} = \begin{cases} 1 \text{ if } AR_{jt} > 0 \\ 0 \text{ otherwise} \end{cases} \tag{21}$$

E_1, E_2, and T are defined as in equation (A2). The test statistic uses the normal approximation to the binomial distribution of parameter $\hat{p}$. If we define w as the number of positive $CAR_{j,t1,t2}$ in the event window. The test statistic then becomes:

$$Z_G = \frac{w - N\hat{p}}{[N\hat{p}\,(1-\hat{p})]^{\frac{1}{2}}} \tag{22}$$

We test the null hypothesis that premiums are equal to zero as follows, where $P_{j,AW}$ is the premium, calculated with anticipation window AW, for firm j:

$$t_{AW}{}^{P} = \frac{\overline{P}_{AW}}{\sigma_{AW} / \sqrt{N}}, \text{ where}$$

$$\overline{P}_{AW} = \frac{1}{N}\sum_{j=1}^{N} P_{j,AW} \qquad \text{for j = 1,..., N}$$

$$\text{and } \sigma_{AW} = \sqrt{\frac{1}{N-1}\sum_{j=1}^{N}(P_{j,AW} - \overline{P}_{AW})^2}$$

Appendix 2 : PTPs and financial distress

Corum Plc underwent an MBO as the firm's results were declining even after the mortgage broking activities entered voluntary liquidation in 2001. The shareholder-managers who owned 39% of the business were only willing to commit further funds if they could take over the whole firm at a discount of 81% to the last price quoted and take the firm private.

In 1997, **UK Safety Group** was at the limit of its banking facilities and was reported to be unable even to fund the redundancy payments needed as part of a restructuring program. The firm had a gearing ratio of about 400%. Repeated attempts at a rights issue had failed. The discounted offer made by Alchemy Partners supported by the buy-out team was agreed by shareholders. The bid was at £1.01 million, a 50% discount on the traded share price. An additional investment of £7.5 million by Alchemy Partners cut the gearing level to a more comfortable level of 50%. The buyout specialist held 90% of the equity, with the management team holding the remaining 10%. It is anticipated that UK Safety will investigate non UK manufacturing sources in order to reduce costs. Finally, it was reported that the existing management are still in place in 2001 and have been re-energized by the buy-out.

Heavy restructuring and dividend cuts dominated **Industrial Control Services'** media exposure in 1995. The firm first needed a rights issue to fund its working capital requirements and reduce borrowings. Although a new management team had consolidated the firm's technological position after 1997, the financial position of the firm had continued to deteriorate. The conclusion was, that the firm was simply too small to function in a market dominated by large competitors. Therefore, the firm ordered its bankers to look for an interested party for the purchase of all or part of the firm. The firm could not rely on the continuing support of its banks in the long term. The board also argued that another equity issue would not be practicable. The board decided to support an offer from Alchemy Partners in order to assure short-term solvency. They took the firm private at an 85% discount on the last quoted share price before the announcement of the offer, at 1 pence.

Cedar Plc was founded in 1983 to provide software for the UK financial services industry. Sales of CRM systems in the US and the UK declined considerably with the burst of the IT bubble. The board decided to investigate the options to ensure survival of the group. Discussions were held with potential purchasers of parts of Cedar Plc, but they did not elicit any binding offers. The profit warning preceding this loss in September 2001 took 93% off the share price. The worst results ever disclosed at the end of 2001 put an end to any hopes for a re-start. Consequently, the board recommended the offer made by Redac, a vehicle set up for the acquisition by Alchemy Partners and debt-funded by the Bank of Scotland. Shareholders received 5 pence per share, a 57% discount to the share price of the day before the firm announced to enter discussions with a potential acquirer.

La Senza Plc never lived up to projections after it was floated in 1996. Already in its first year of being listed, the retailer was plagued by delays in new store openings, which caused it to miss a significant amount of (Christmas-related) revenues. Instead of breaking even as expected, the firm made a loss (before tax) of £1.5 million on £18 million sales in this first year. The results after this dramatic first year did not improve. The banks were reluctant to renew La Senza's borrowing facilities unless they were fully covered by cash collateral. Suzy Shier, the parent company, announced in January 1998 that it saw no other option but to find a buyer for the firm. It eventually sold its 60.2% holding in La Senza to Theo Paphitis and his family, owner of a rival lingerie retailer. This block of shares was transferred for the symbolic price of £1, and triggered rule 9 of the City Code, which requires an offer for the remaining shares of the firm. Paphitis offered 10 pence per share to the remaining shareholders, a 41% discount to the last share price before the company announced it was in discussions. La Senza lost 93% of its market value since it came to AIM in 1996.

Figure 1a: US public to private activity
This figure shows the number of PTPs (left hand scale) and the value in million USD (right hand scale). Source: Centre for Management Buyout Research / Barclays Private Equity/ Deloitte & Touche.

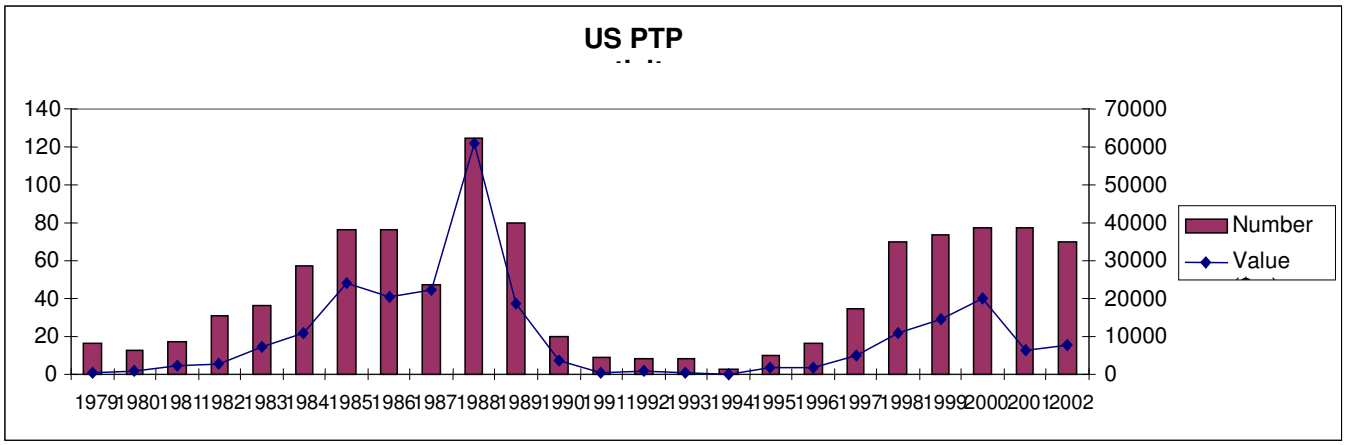

Figure 1b: UK public to private activity
This figure shows the number of PTPs (left hand scale) and the value in million GBP (right hand scale). Source: Centre for Management Buyout Research / Barclays Private Equity/ Deloitte & Touche.

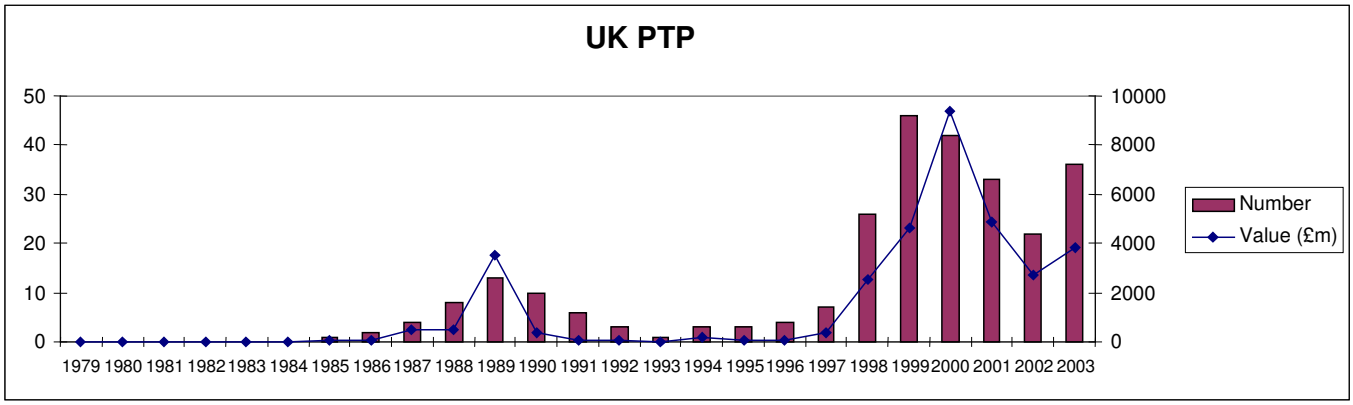

Figure 1c: Continental European public to private activity
This figure shows the number of PTPs (left hand scale) and the value in million Euro (right hand scale). Source: Centre for Management Buyout Research / Barclays Private Equity/ Deloitte & Touche.

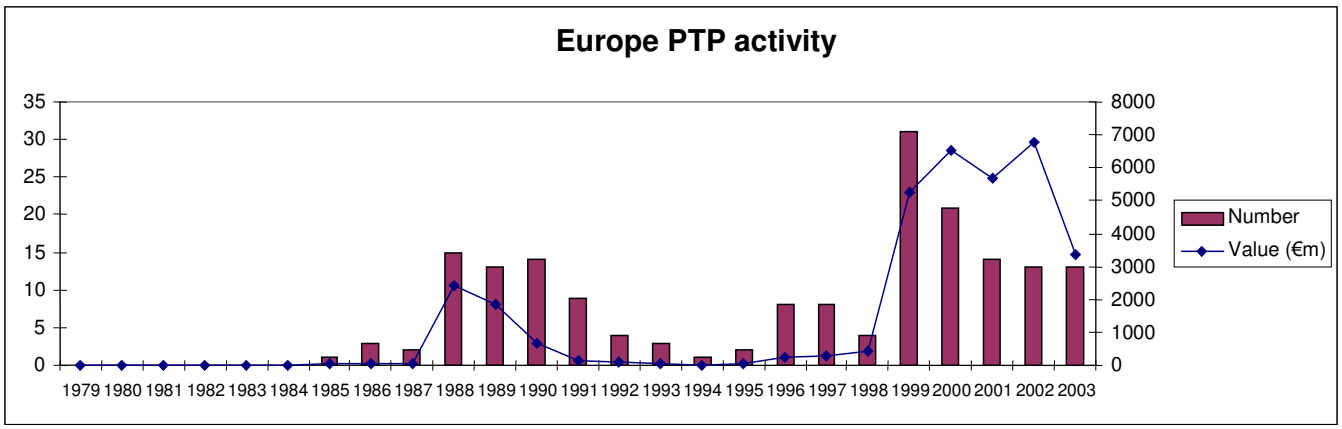

Fig. 1d: Japanese Public to Private activity

This figure shows the number of PTPs (left hand scale) and the value in Billion Yen (right hand scale). Source: Centre for Management Buyout Research / Barclays Private Equity/ Deloitte & Touche.

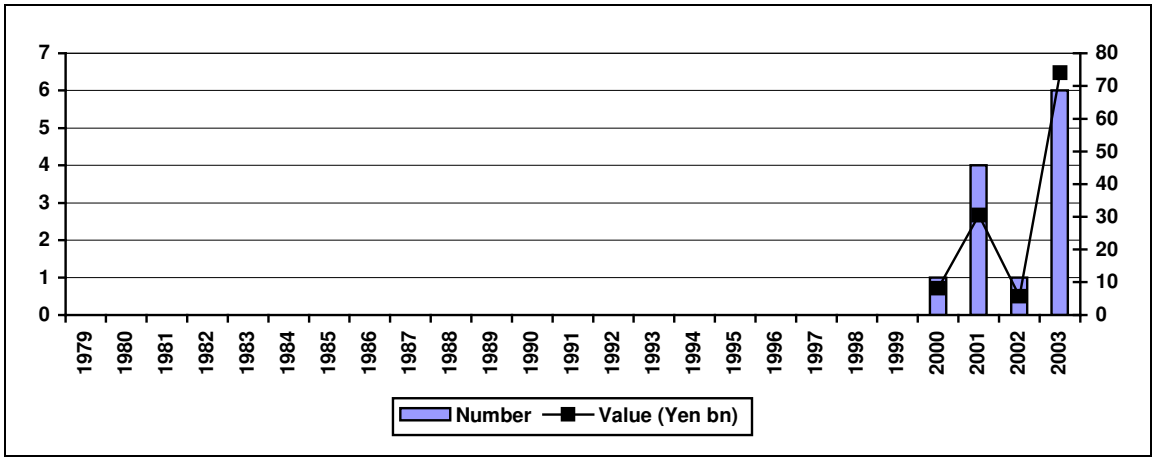

Figure 2: Shareholder wealth effects by type of announcement

This figure shows the cumulative average abnormal returns of firms going private in the UK from 1997-2003. The figure distinguishes 4 lines: (1), shows the 'all-in-one' CAAR, for those announcements by which the bidder or the type of deal are identified, (2) shows the CAAR for those announcements in which the bidder is not revealed, (3) shows the average CAAR for those PTP announcements, for which earlier announced was made that a takeover was imminent without specifying the details of the type of deal (event 1 and 2 do not coincide), (4) shows an artificial CAAR constructed by summing the CAARs of event 1 (line 2) and event 2 (line 3). The CAARs are summed, provided that the announcement date of event 2 does not fall within the event window of event 1. The sample contains 177 observations. Expected returns were calculated with the CAPM, and the CAPM parameters were calculated from a market model regression, corrected for thin trading and mean reversion of the systematic risk. The beta parameters were trimmed at the 5% and the 95% distribution range. The estimation window was run from –235 to –41 days before the first announcement of takeover, and the FTSE All Shares Index was used as the market index.

Legend:

All information released at once:

□ = CAAR of 'all-in-one' PTP announcement (event 1) (1)

Information is released in stages:

+ = CAAR of takeover announcement (event 1) but the identity of acquirer and type of deal is not yet announced (2).

× = CAAR of announcement of the identity of the acquirer and the type of deal for firms about which only partial information had been released earlier (event 2) (3)

Δ = + and × = CAAR of events 1 and 2 combined for firms with information releases in stages. (4)

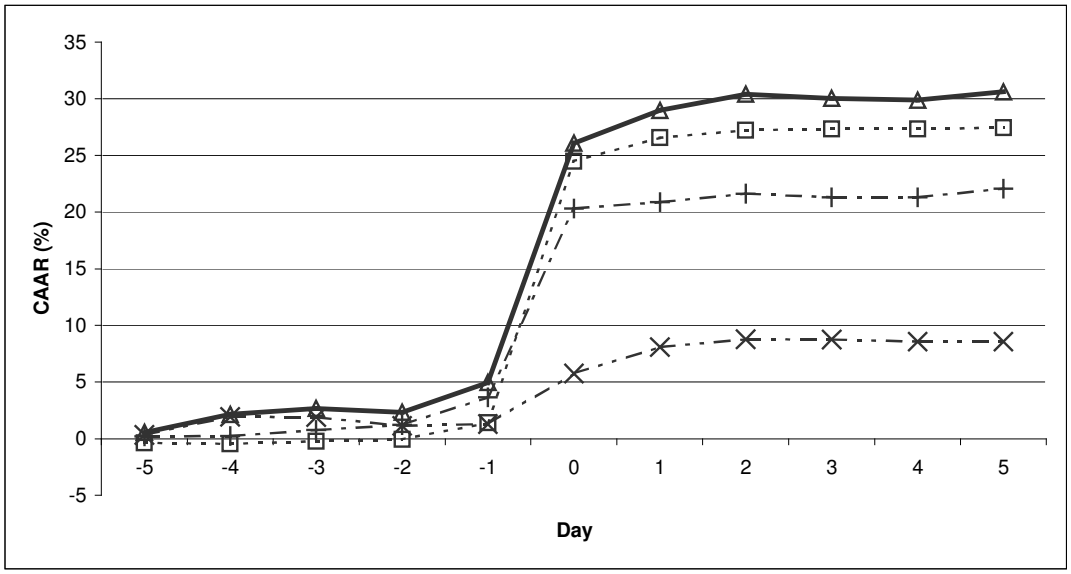

Table 1: Descriptive statistics on accounting, cash flow and share price-based measures

This table summarizes the descriptive statistics on accounting data and share price based measures. Source: Extel Cards, Financial Times, Annual reports and own calculations

All sample firms (n = 177)		**Mean**	**Median**	**Std. Dev.**	**Min.**	**Max.**
Firm size:	Total sales (GBP million)	158.6	56.3	347.8	0.8	2574.2
	Total assets (GBP million)	200.7	62	453.9	0.9	4065.7
	Total market value (GBP m)	87	33.9	161.7	0.6	1370.7
Performance:	Return on Assets (%)	3.7	5.6	19.2	-190	36
Leverage and taxes	Debt to equity (%)	34.5	12.1	53	0	284.5
	Taxes (% of sales)	2.5	1.8	2.8	-2.4	18.7
Cash flow and retention	Cash to assets (%)	11	4.9	16.1	0	95.9
	Free cash flow (% of assets)	5	5.9	16.6	-100	48.1
MBO (137 firms)						
Firm size:	Total sales (GBP million)	103.5	52.1	186.6	1.5	1815.8
	Total assets (GBP million)	153.2	58.6	337.7	0.9	3296
	Total market value (GBP m)	62.5	30.9	91.1	0.6	655.5
Performance:	Return on Assets (%)	3.9	6.1	21.1	-190	36
Leverage and taxes	Debt to equity (%)	32.4	9	53	0	284.5
	Taxes (% of sales)	2.7	2	2.8	-0.6	18.7
Cash flow and retention	Cash to assets (%)	11.9	6.6	16.9	0	95.9
	Free cash flow (% of assets)	5.4	5.9	17.3	-100	48.1
MBI (18 firms)						
Firm size:	Total sales (GBP million)	299.2	67.1	580.4	8.4	1889.8
	Total assets (GBP million)	232.9	65.6	408.5	12.7	1608.4
	Total market value (GBP m)	112.3	23.6	202.9	6.9	738.7
Performance:	Return on Assets (%)	-1.0	1.8	12.7	-47.7	9
Leverage and taxes	Debt to equity (%)	48.1	28	66.2	0	257
	Taxes (% of sales)	1.1	0.3	1.6	-0.3	5.2
Cash flow and retention	Cash to assets (%)	10.5	2	16.5	0	50
	Free cash flow (% of assets)	0.7	1.9	15.9	-48.5	30.9
IBO (22 firms)						
Firm size:	Total sales (GBP million)	387.1	121.7	651.2	0.8	2574.2
	Total assets (GBP million)	469.6	164.5	872.8	10.1	4065.7
	Total market value (GBP m)	218.8	110.3	330.8	8.1	1370.7
Performance:	Return on Assets (%)	5.7	6	8.3	-18.7	24.9
Leverage and taxes	Debt to equity (%)	37	20.4	39.8	0	136.6
	Taxes (% of sales)	2.3	1.5	3.2	-2.4	12.3
Cash flow and retention	Cash to assets (%)	5.9	2.6	7.9	0	28.3
	Free cash flow (% of assets)	6.1	6.5	11.6	-23.3	28

Table 2: Average share price performance in the year prior to PTP and performance since flotation.

Panel A shows the share price performance in the year prior to the PTP. The share price performance is measured from –300 to –41 days before the first announcement of takeover interest that eventually led to the PTP. The performance of the FTSE All Shares Index was calculated in the same way for each individual firm. Panel B shows the market capitalization for those sample firms that were floated after 1993, at the floatation date and at the first announcement data of the PTP transaction. ***, **, * stand for statistical significance at the 1, 5 and 10% level. Source: Own calculations

Panel A: Average market-adjusted share return by year

Year	Firms	Share return – FT All share return (%)	t-value	FT All Shares return (%)	t-value
1997	7	-11.9	-1.796	15.1	6.360***
1998	27	-36.4	-5.863***	22.9	18.423***
1999	46	-31.8	-7.549***	5.6	5.864***
2000	42	-6.8	-2.644**	11.1	12.557***
2001	32	-1.2	-1.169	-2.0	-1.920*
2002	20	4.6	-0.981	-16.3	-13.085***
2003	3	-7.8	-0.592	-19.3	-7.838***

Panel B: Market cap (in GBP millions) of sample firms floated since 1993, measured at the floatation and at the first announcement date of the PTP

Market cap at flotation date	Market cap at offer price of PTP	Year of PTP	Firms	Difference	Return (%)
84.6	86.0	1997	2	1.4	1.7
543.9	483.2	1998	10	-60.7	-11.7
508.0	532.4	1999	14	24.4	4.8
744.0	809.5	2000	7	65.5	8.8
332.3	344.7	2001	5	12.4	3.7
771.7	346.4	2002	6	-425.3	-55.1
2984.5	2602.3	Total	44	-382.2	-12.8

Table 3: Descriptive statistics on deal characteristics and company history

This table shows descriptive statistics on deal characteristics and company history by PTP type. Hostile is a dummy variable that equals 1 if the first bid was rejected. Bidder competition equals 1 if there was more than 1 bidder. Defensive transaction equals 1 if the PTP was enacted to protect against unwanted possible takeover Financial Distress equals 1 if the firm depends on the benevolence of banks to survive. LBO equals 1 if the firm was subject to an LBO before. AIM equals 1 if the firm is listed on the Alternative Investment Market. IPO 3(5) equals 1 if firm was floated 3 (5) years before the PTP. Restructuring 3 (5) equals 1 if the firms' assets were restructured 3 (5) years before the PTP. Profit warning 3 (5) equals 1 if the firm issued a profit warning 3 (5) years before PTP. CEO 3 (5) equals 1 if CEO was replaced 3 (5) years before PTP. Source: Annual reports, Financial Times, Regulatory News Service and own calculations.

	All sample firms (177 firms)		**137 MBOs**		**18 MBIs**		**22 IBOs**	
Panel A: Deal characteristics	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**
Hostile bid	13	7.3	6	4.4	5	27.8	2	9.1
Bidder competition	11	6.2	8	5.8	1	5.6	2	9.1
Defensive action	4	2.3	4	2.9	0	0.0	0	0.0
Financial distress	5	2.8	3	2.2	1	5.6	1	4.5
Deal equity value > GBP 100 m	52	29.4	36	26.3	4	22.2	12	54.5
Deal equity value between GBP 50 m and 100 m	37	20.9	32	23.4	2	11.1	2	9.1
Panel B: Company history								
Prior acquisition interest	34	19.2	26	19.0	6	33.3	2	9.1
LBO	12	6.8	10	7.3	0	0.0	2	9.1
AIM	11	6.2	9	6.6	2	11.1	0	0.0
IPO 3	17	9.6	11	8.0	3	16.7	3	13.6
IPO 5	32	18.1	26	19.0	3	16.7	3	13.6
Restructuring 3	28	15.8	17	12.4	4	22.2	7	31.8
Restructuring 5	48	27.1	35	25.5	4	22.2	9	40.9
Profit warning 3	67	37.9	50	36.5	9	50.0	8	36.4
Profit warning 5	81	45.8	59	43.1	12	66.7	10	45.5
CEO 3	44	24.9	35	25.5	4	22.2	5	22.7
CEO 5	61	34.5	47	34.3	6	33.3	8	36.4

Table 4: Descriptive statistics on substantial shareholdings

This table shows the substantial shareholdings (>5%) by category of owner. It should be noted that the means, medians and standard deviations are calculated conditional on the presence of a stake of that specific shareholder type. The Herfindahl index captures the concentration of the shareholdings. Dominance shows in which percentage of the firms the shareholder of a particular type is the largest shareholder. Dominant shareholder shows the average percentage of ownership of the largest shareholder regardless of his category.

All Firms	mean (%)	median (%)	std. dev (%)	presence (%)	dominance (%)
Banks	3.4	0.0	5.5	40.1	7.9
Investm. and pension funds	10.5	8.9	8.9	89.8	34.5
Insurance companies	2.2	0.0	3.5	37.3	3.4
Industrial and commercial co's	2.2	0.0	7.4	14.1	6.2
Individual or family	3.7	0.0	10.1	31.6	6.2
Real estate funds	1.6	0.0	6.0	8.5	5.6
Directors	12.5	4.2	17.6	58.2	32.2
Venture capital and private equity	1.6	0.0	4.9	14.1	4.0
Herfindahl index	11.0	6.6	12.1	na	na
Dominant shareholder	23.5	18.7	16.0	na	100.0
MBO					
Banks	3.3	0.0	5.3	38.7	8.0
Investm. and pension funds	9.8	8.6	7.6	89.8	32.1
Insurance companies	2.2	0.0	3.4	37.2	2.9
Industrial and commercial co's	1.8	0.0	5.9	12.4	5.8
Individual or family	3.5	0.0	9.2	34.3	5.1
Real estate funds	1.6	0.0	6.1	8.0	5.1
Directors	14.1	7.6	18.4	63.5	37.2
Venture capital and private equity	1.3	0.0	4.3	12.4	3.6
Herfindahl index	11.0	6.6	12.1	na	na
Dominant shareholder	23.4	18.6	15.9	na	100.0
MBI					
Banks	4.1	0.0	7.6	38.9	11.1
Investm. and pension funds	8.6	7.0	6.3	88.9	16.7
Insurance companies	1.9	0.0	3.5	27.8	0.0
Industrial and commercial co's	7.5	0.0	15.9	27.8	16.7
Individual or family	6.8	0.0	18.2	27.8	16.7
Real estate funds	3.1	0.0	8.0	16.7	11.1
Directors	9.2	1.6	15.9	50.0	22.2
Venture capital and private equity	2.4	0.0	6.5	16.7	5.6
Herfindahl index	14.1	9.3	14.2	na	na
Dominant shareholder	28.1	23.5	18.8	na	100.0
IBO					
Banks	3.8	1.7	4.5	50.0	4.5
Investm. and pension funds	16.0	13.5	14.7	90.9	63.6
Insurance companies	2.8	0.0	4.2	45.5	9.1
Industrial and commercial co's	0.6	0.0	1.8	13.6	0.0
Individual or family	2.0	0.0	5.1	18.2	4.5
Real estate funds	0.6	0.0	2.8	4.5	4.5
Directors	5.3	0.0	10.2	31.8	9.1
Venture capital and private equity	2.8	0.0	6.8	22.7	4.5
Herfindahl index	8.6	5.8	10.2	na	na
Dominant shareholder	20.8	16.0	13.9	na	100.0

Table 5: Premiums by type of leveraged PTP and by anticipation window

The premiums (%) are calculated as follows: $\text{Premium} = LN(\textit{final price offered} / \textit{pre-takeover share price})$. The anticipation window is the number of days prior to the announcement date of the leveraged PTP. Obs. stands for the number of observations (firms). ***, ** and * stand for statistical significance at the 1%, 5% and 10% level, respectively. Source: own calculations.

Panel A: Premiums by anticipation window (sample = 177 firms)

Anticipation window	Obs.	Mean	t-value	Min.	25% quartile	Median	75% quartile	Max.
1 day	177	37.0	9.247***	-96.3	20.8	35.5	55.6	175
10 days	177	41.1	9.889***	-96.3	22.5	38.7	60.2	179.7
20 days	177	41.0	9.993***	-96.1	25.0	39.5	58.7	171.1
40 days	177	40.1	8.786***	-96.9	25.7	38.5	56.9	171.1

Panel B: Premiums by type of PTP

Deal type	Anticipation window	Obs.	mean (%)	t-value
MBO	20 days	137	40.6	8.314***
	40 days		39.1	7.579***
MBI	20 days	18	42.0	4.382***
	40 days		38.8	2.957**
IBO	20 days	22	42.6	3.970**
	40 days		47.4	2.957**

Table 6: International evidence on premiums paid in public to private transactions

This table shows the studies that estimate the shareholder wealth effects using a premiums analysis. ALL = all going private deals. MBO = MBO deals only

Study	Sample period/ Country	Type of deal	Anticipation Window	N	Mean Premium offered
DeAngelo, DeAngelo and Rice (1984)	1973-80 US	ALL	40 days	72	56.3%
Lowenstein (1985)	1979-84 US	MBO	30 days	28	56.0%
Lehn and Poulsen (1989)	1980-87 US	ALL	20 days	257	36.1%
Amihud (1989)	1983-86 US	MBO	20 days	15	42.9%
Kaplan (1989a, 1989b)	1980-85 US	MBO	2 months	76	42.3%
Asquith and Wizman (1990)	1980-88 US	ALL	1 day	47	37.9%
Harlow and Howe (1993)	1980-89 US	ALL	20 days	121	44.9%
Travlos and Cornett (1993)	1975-83 US	ALL	1 month	56	41.9%
Easterwood, Singer, Seth and Lang (1994)	1978-88 US	MBO	20 days	184	32.9%
Weir, Laing and Wright (2005a)	1998-2000 UK	ALL	1 month	95	44.9%

Table 7: CAARs for leveraged PTPs

This table shows the CAARs of firms going private in the UK over the period 1997-2003 for different event windows. Event 1 is the first date of any takeover interest that eventually leads to the PTP. For 36% of the sample, the information on the PTP arrives in stages: a first announcement of takeover interest (event 1) and a second one in which the bidding party is revealed and it becomes clear that the bid is a leveraged buyout (event 2). Event 1+2 combines the CAARS of both events provided there is no overlap in event windows. Expected returns were calculated with the CAPM corrected for thin trading and mean reversion. The betas were trimmed at the 5% and the 95% level of the distribution. The estimation window spans transaction days –235 to –41 whereby 0 stands for the first announcement date. The FTSE All Shares Index is the market index. The details on the calculation of the test statistics are given in Appendix 1. Obs. stands for the number of observations (firms).***, ** and * stand for statistical significance at the 1%, 5% and 10% level, respectively. Source: own calculations.

Panel A: CAARs by event window (Observations = 177)

	Event 1				Event 1+2			
Window	CAAR (%)	Simple t-stat.	K&W t-stat	Gen. sign test	CAAR (%)	Simple t-stat	K&W t-stat	Gen. sign test
[-1,0]	22.68	13.889***	66.111***	13.522***	25.17	11.229***	72.245***	13.824***
[-5,5]	25.53	11.573***	30.908***	13.673***	28.17	10.034***	33.710***	13.673***
[-40,40]	29.28	10.439***	12.335***	13.673***	30.79	8.042***	12.590***	13.673***

Panel B: CAARS by deal type

		Event 1				Event 1+2		
Deal type	Window	Mean (%)	t-value	Median	Deal type	Mean (%)	t-value	Median
MBO	[-1,0]	22.7	14.444***	18.3	MBO	24.3	10.724***	21.5
(Obs.=137)	[-5,5]	25.7	11.414***	24.8		28.2	9.030***	27.9
	[-40,40]	30.8	12.252***	29.7		33.4	8.575***	31.3
MBI	[-1,0]	22.6	5.536***	18.3	MBI	27.7	6.194***	26.3
(Obs.=18)	[-5,5]	24.4	6.345***	19.8		27.5	5.104***	22.3
	[-40,40]	36.1	5.676***	31.5		37.7	4.636***	43.5
IBO	[-1,0]	23.73	2.597**	21.64	IBO	30.21	2.622**	23.62
(Obs.=22)	[-5,5]	26.24	2.303*	24.39		29.88	2.672**	32.53
	[-40,40]	27.39	2.263*	29.11		32.00	2.785**	33.54

Table 8: Previous evidence of CAARs in public to private transactions

This table shows papers that estimate shareholder wealth effects via event studies. ALL = all going private deals. MBO = MBO deals only. All CAARs are statistically significance at the 1% level.

Study	Sample period/ country	Type of Deal	Event window	N	CAAR
DeAngelo, DeAngelo and Rice (1984)	1973-80 US	ALL	-1,0 days -10,10 days	72 72	22.27% 28.05%
Torabzadeh and Bertin (1987)	1982-85 US	ALL	-1,0 months -1,1 months	48 48	18.64% 20.57%
Lehn and Poulsen (1989)	1980-87 US	ALL	-1,1 days -10,10 days	244 244	16.30% 19.90%
Amihud (1989)	1983-86 US	MBO	-20,0 days	15	19.60%
Kaplan (1989)	1980-85 US	MBO	-40,60 days	76	26.00%
Marais, Schipper and Smith (1989)	1974-85 US	ALL	0,1 days -69,1 days	80 80	13.00% 22.00%
Slovin, Sushka and Bendeck (1991)	1980-88 US	ALL	-1,0 days -15,15 days	128 128	17.35% 24.86%
Lee (1992)	1973-89 US	MBO	-1,0 days -69, 0 days	114 114	14.90% 22.40%
Frankfurter and Gunay (1992)	1979-84 US	MBO	-50,50 days -1,0 days	110 110	27.32% 17.24%
Travlos and Cornett (1993)	1975-83 US	ALL	-1,0 days -10,10 days	56 56	16.20% 19.24%
Lee, Rosenstein, Rangan and Davidson (1992)	1983-89 US	MBO	-1,0 days -5,0 days	50 50	17.84% 20.96%
Van de Gucht and Moore (1998)	1980-92 US	ALL	-1, 1 days -10,10 days	187 187	15.60% 20.20%
Goh, Gombola, Liu and Chou (2002)	1980-96 US	ALL	-20,1 days 0,1 days	323 323	21.31% 12.68%

Table 9: Summary of hypotheses and findings

Hypothesis	Abbreviation	Expected sign	Result
H1: Tax Benefit	Taxes (as % of sales)	+	Not significant
	Taxes * performance (1 if ROA>median)	-	Not significant
	Debt/equity ratio	-	Negative
H2: Incentive Realignment	Managerial ownership	-	Strongly negative
H3: Control	Institutional blockholder	-	Negative
	Corporation blockholder	-	Strongly negative
	Family blockholder	-	Not significant
H4: Free Cash Flow	Free cash flow	+	Not significant
H5: Transaction costs	AIM listing (1=yes)	-	Negative
H6: Takeover defence	Prior takeover interest (1=yes)	+	Not significant
H7: Undervaluation	Share performance * MBO	-	Strongly negative
	Share performance * MBI	-	Not significant
	Share performance * IBO	-	Strongly negative
Control variables	Hostile bid (1=yes)	-	Not significant
	CEO was removed past 2 years (1=yes)	-	Strongly negative
	Corporate restructuring in past 5 years (1=yes)	-	Not significant
	Pre-2000	+	Not significant
	Bidder competition (1=yes)	+	Strongly positive

Table 10: Cross-sectional regressions for premiums/CAARs in PTP transactions.

This table shows the cross-sectional regressions estimating the determinants of the premiums/CAARs in PTP transactions. The anticipation window for the premiums is 20 days. The event date is the first announcement of takeover interest that eventually led to the firm going private. The number of observations is 172. ***, ** and * stand for statistical significance at the 1%, 5% and 10% level, respectively. Source: own calculations

	Model 1		**Model 2**	
	Dep. Var = premium		Dep. Var = CAAR	
Variable	Par. Estimate	t-value	Par. Estimate	t-value
Constant	0.5806	7.119***	0.4363	5.169***
IBO (1=yes)	-0.0066	-0.128	-0.0396	-0.739
MBI (1=yes)	0.0073	0.148	0.0254	0.494
Taxes				
Taxes * performance (1 if ROA>median)	-0.6935	-0.932	0.0127	0.016
Taxes (as % of sales)	-0.1713	-0.239	-1.133	-1.526
Debt/equity ratio	-0.0708	-2.305**	-0.0295	-0.927
Incentive realignment				
Managerial ownership	-0.0016	-2.143**	-0.0027	-3.378***
Managerial stake >25% (1=yes)	-0.0482	-1.666*	-0.046	-1.538
Ownership and control				
Institutional blockholder >5% (yes =1)	-0.0794	-2.290**	-0.0648	-1.804*
Corporation blockholder >5% (yes =1)	-0.0807	-2.808***	-0.0920	-3.094***
Family blockholder >5% (yes =1)	-0.0121	-0.389	0.0365	1.136
Free cash flow				
Free cash flow	0.0130	0.133	0.0463	0.458
Transaction costs				
AIM listing (1=yes)	-0.0383	-1.922*	0.0026	0.127
Takeover defense				
Prior takeover interest (1=yes)	0.0549	1.620	0.0106	0.301
Undervaluation				
Share performance * MBO	-0.1327	-3.679***	-0.1039	-2.782***
Share performance * MBI	-0.1500	-1.251	0.0272	0.219
Share performance * IBO	-0.2702	-1.954*	-0.5615	-3.924***
Return on assets	-0.0006	-0.44	0.0011	0.800
Control variables				
Hostile bid (1=yes)	-0.0118	-0.24	-0.0762	-1.495
Bidder competition (1=yes)	0.1308	2.562**	-0.1026	-1.041
CEO was removed past 2 years (1=yes)	-0.1025	-3.282***	-0.1301	-4.025***
Corporate restructuring in past 5 years (1=yes)	-0.0053	-0.165	0.0481	1.441
Size (ln of total assets)	0.0041	0.307	0.0014	0.101
PTP occurred pre-2000 (1=yes)	-0.0321	-1.037	-0.008	-0.249
Industry dummies	yes	yes	yes	yes
F-value	3.390***		2.854***	
R-squared	0.419		0.378	
Adjusted R-squared	0.295		0.245	